



IN-SITU BURNING, OILY VEGETATION

OBJECTIVE & STRATEGY

ISv

The objective of In-situ Burning, Oily Vegetation is to burn oil-covered vegetation in place to prevent impacts to wildlife and speed re-vegetation. Burning may be used to augment mechanical removal of large amounts of oil and may cause less damage to marsh and tundra environments than mechanical removal. In-situ burning is most effective when ignited as soon as possible after the oil has impacted an area, so that volatile components of the oil can be utilized to sustain the burn.

The general strategy is to:

1. Identify the location and extent of the spill.
2. Select equipment and a configuration that best supports the operating environment.
3. Notify and seek approval from appropriate authorities, including the local fire department.
4. Review and follow the current In-situ Burning Guidelines.
5. Mobilize burning and fire suppression equipment and personnel to the location.
6. Prepare the area and begin burning process.
7. Monitor the area to ensure that vegetation does not reignite.
8. If oil collects into pools, utilize an appropriate recovery system to remove it.



Figure ISv-1. Burning oily vegetation by raking to enhance flammability.

TACTIC DESCRIPTION

An in-situ burning system for oily vegetation consists of hand tools, an ignition system (such as a propane weed burner), and fire suppression equipment. Burning is initiated after pooled oil has been removed from the impacted area. Fire suppression equipment and operators must be present before burning operations are begun. The burning is done in a controlled fashion in small segments. To enhance flammability,

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vegetation may be raked up into a semi-vertical position. Then a weed burner is used to ignite the vegetation and it is allowed to burn until a small amount of the plant or "stubble" remains above ground (Figure ISv-1). This removes the oil, but does not damage the root systems needed for regeneration. If the area is at risk of igniting into a larger fire or if burning will result in damaging the root systems, the soil can be saturated with fresh-water before ignition. If residues from heavy oils and crude are produced, these may have to be mechanically removed.

Operating Environments

In-situ Burning, Oily Vegetation is recommended for use on ground covering vegetation where risks of wild fire are minimum. This would include tundra, marshes, beaches and other grass and sedge covered environments. Burning in wooded wetland vegetation is not recommended.

ISv-1 TUNDRA OR MARSH

Tundra and marsh environments present challenges for operations due to their sensitivity. Plywood or other similar material may be used to establish a pathway for heavy foot and ATV traffic to the site. Alaska Department of Natural Resources approved tundra vehicles or helicopters may also be used for transportation to remote sites. Initial response should be to remove the pooled oil on the surface with the appropriate removal system, then initiate burning to remove oiled vegetation. Under dry conditions, the area can be flushed with low-pressure fresh water to protect the root systems and prevent uncontrolled wildfire.

ISv-2 BEACHES

In-situ burning can be used to remove oiled vegetation above the high tide mark (Figure ISv-2). These areas can contain significant vegetation with large root systems that are critical to preventing beach erosion. Care must be taken to ensure that root damage is kept to a minimum. Larger wood debris should be removed prior to burning.



Figure ISv-2. In-situ burning on beach environment.

Deployment Configurations

Work on the upwind edge of the oiled area to minimize the amount of smoke the responders are exposed to and to reduce the risk of further spreading of the oil.





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DEPLOYMENT CONSIDERATIONS AND LIMITATIONS

SAFETY

- Consider the effects of smoke on responders and populated areas.
- Evaluate respiratory protection for response personnel.
- Anticipate and prevent secondary fires.
- Wind conditions should be monitored to ensure responder safety and fire control. Burning is not recommended in winds exceeding 15 knots.
- Refined products generally burn more efficiently and produce fewer residues but can produce smoke that is more toxic.
- Fire retardant clothing should be worn by responders.

DEPLOYMENT

- Sorbents may be utilized during and after burning to remove pooled oil.
- Place plywood, outdoor carpet, or other protective material across any tundra or marsh that must be traversed by heavy traffic.
- An open burn permit from ADEC may be required for operations not covered by ISB Guidelines.
- In order to speed plant regeneration, root systems should not be burned.
- One weed burner is capable of burning approximately 50 square feet in an hour.
- Consider the possible effects of smoke on nesting birds and other wildlife.

REFERENCES TO OTHER TACTICS

Other tactics associated with In-situ Burning, Oily Vegetation include:



- On-land Recovery



- In-situ Burning, Pooled Oil



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EQUIPMENT AND PERSONNEL RESOURCES

Resources for this tactic include ignition systems, rakes, fire suppression equipment and response personnel. Configuration and specific resources required will be determined by site conditions, spilled oil type and volume, area of coverage, and resource availability. Resource sets should be refined as site-specific requirements dictate.



Equipment	Function	Quantity	Notes
Ignition system (handheld burner, propane tank and hoses)	Burn oiled vegetation	Site-specific	
Rakes	Prepare vegetation for burning	Site-specific	
Fire suppression system	Control burn if necessary	Site-specific	Use of large hand held fire extinguishers is acceptable for small areas. Consider use of tanker trucks for larger operations.
Plywood sheeting	Traversing sensitive environments; tundra/marshes	Site-specific	Use for foot and ATV traffic to access site
Sorbent material	Remove oil	Incident-specific	Remove any small pools of oil that can be easily accessed
Vehicle	Function	Quantity	Notes
Pick-up truck, ATV	Transportation to site	1	Depending on number of responders
Tanker truck	Provide water to site to flood the area in dry conditions and provide fire suppression if necessary	1	Depends on area covered and site conditions
Personnel	Function	Quantity	Notes
Field Team Leader	Supervise operations	1	May not always be on-site
Skilled Technicians	Operate weed burner and direct general technicians	1 per unit deployed	Depending on area covered
General Technicians	Work under the direction of skilled technicians to prep areas for burning	1 per unit deployed	Depending on area covered

